

Application No.: 10/586,069  
Amendment Dated: September 15, 2009  
Reply to Office Action of: August 19, 2009

MAT-8865US

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently Amended) An antenna device, comprising:

an antenna element;

a high-frequency circuit connected to the antenna element;

a substrate having the high-frequency circuit thereon;

a first ground section connected to the high-frequency circuit;

a reactance circuit connected to the first ground section; and

a second ground section connected to the reactance circuit,

wherein both of the first ground section and the second ground section are formed on the substrate

wherein the reactance circuit is positioned so as to have a substantial distance of a length of  $n$  times wavelength and a half of wavelength in electrical length; where  $n$  takes a positive integer including zero; away from a feeding point of the first ground section or the second ground section.

2. (Original) The antenna device of claim 1, further comprising:

a transmitter-receiver; and

a feeder line for connecting between at least any one of the first ground section and the second ground section and the transmitter-receiver.

3. (Previously Presented) An antenna device, comprising:

an antenna element;

Application No.: 10/586,069  
Amendment Dated: September 15, 2009  
Reply to Office Action of: August 19, 2009

MAT-8865US

a high-frequency circuit connected to the antenna element;

a first ground section connected to the high-frequency circuit;

a reactance circuit connected to the first ground section;

a second ground section connected to the reactance circuit;

a transmitter-receiver; and

a feeder line for connecting between at least any one of the first ground section and the second ground section and the transmitter-receiver,

wherein the feeder line is a coaxial line including

a signal line, which is connected to the high-frequency circuit, and

a shield line that is disposed so as to surround the signal line and is connected to at least any one of the first ground section and the second ground section.

4. (Original) An antenna device, comprising:

an antenna element;

a high-frequency circuit connected to the antenna element;

a ground section connected to the high-frequency circuit;

a reactance circuit; and

a coaxial line having

a signal line and

a shield line that is disposed so as to surround the signal line and is connected to the ground section,

wherein, the shield line has

09/23/2009

Application No.: 10/586,069  
Amendment Dated: September 15, 2009  
Reply to Office Action of: August 19, 2009

MAT-8865US

a first shield line and

a second shield line connected to the first shield line via the reactance circuit.

5. (Previously Presented) An antenna device, comprising:

an antenna element;

a high-frequency circuit connected to the antenna element;

a first ground section connected to the high-frequency circuit;

a reactance circuit connected to the first ground section; and

a second ground section connected to the reactance circuit,

wherein the reactance circuit is formed of a parallel circuit of an inductor element and a capacitor element.

6. (Previously Presented) An antenna device, comprising:

an antenna element;

a high-frequency circuit connected to the antenna element;

a first ground section connected to the high-frequency circuit;

a reactance circuit connected to the first ground section; and

a second ground section connected to the reactance circuit,

wherein the reactance circuit includes a variable capacitance diode element.

7. (Previously Presented) The antenna device of claim 1,

wherein the reactance circuit includes

a plurality of reactance elements and

09/23/2009

Application No.: 10/586,069  
Amendment Dated: September 15, 2009  
Reply to Office Action of: August 19, 2009

MAT-8865US

a switch for switching the reactance elements.

8. (Previously Presented) The antenna device of claim 1,

wherein the high-frequency circuit includes a receiving power detecting circuit for controlling a reactance value of the reactance circuit.

9. (Previously Presented) An antenna device, comprising:

an antenna element;

a high-frequency circuit connected to the antenna element;

a first ground section connected to the high-frequency circuit;

a reactance circuit connected to the first ground section; and

a second ground section connected to the reactance circuit,

wherein the high-frequency circuit includes

a receiving power detecting circuit for controlling a reactance value of the reactance circuit and

an amplifier, and

the receiving power detecting circuit detects receiving power of output from the amplifier.

10. (Previously Presented) The antenna device of claim 1

wherein the reactance circuit include a reactance-value control circuit for controlling a reactance value of the reactance circuit.

11. (Cancelled).

12. (Previously Presented) The antenna device of claim 3,

wherein a control signal for controlling a reactance value of the reactance circuit is added on the signal line.

13. (Previously Presented) The antenna device of claim 4,

wherein the reactance circuit is formed of a parallel circuit of an inductor element and a capacitor element.

14. (Previously Presented) The antenna device of claim 4,

wherein the reactance circuit includes a variable capacitance diode element.

15. (Previously Presented) The antenna device of claim 4,

wherein the reactance circuit includes

a plurality of reactance elements and

a switch for switching the reactance elements.

16. (Previously Presented) The antenna device of claim 4,

wherein the high-frequency circuit includes a receiving power detecting circuit for controlling a reactance value of the reactance circuit.

17. (Previously Presented) The antenna device of claim 16,

wherein the high-frequency circuit includes an amplifier, and

the receiving power detecting circuit detects receiving power of output from the amplifier.

18. (Previously Presented) The antenna device of claim 4,

wherein the reactance circuit include a reactance-value control circuit for controlling a reactance value of the reactance circuit.

19. (Previously Presented) The antenna device of claim 4,

Application No.: 10/586,069  
Amendment Dated: September 15, 2009  
Reply to Office Action of: August 19, 2009

MAT-8865US

09/23/2009

wherein the reactance circuit is positioned so as to have a substantial distance of a length of  $n$  times wavelength and a half of wavelength in electrical length; where  $n$  takes a positive integer including zero; away from a feeding point of the ground section.

20. (Previously Presented) The antenna device of claim 4,

wherein a control signal for controlling a reactance value of the reactance circuit is added on the signal line.